July 11,1996

Dillard Smith
Construction
Company

Superfund Division
U.S. EPA, Region VII
726 Minnesota Avenue
Kansas City, Kansas 66101

ATTENTION: Pauletta France-Isetts

Re: PCB Treatment, Inc., Superfund Sites
2100 Wyandotte Street, Kansas City, Missouri and
45 Ewing Street, Kansas City, Kansas.
Reply to: Request for Information.

Enclosed please find our responses to questions asked in the letter received from your Agency dated June 14, 1996, pertaining to the above noted topic, and in the manner requested. Although our records from the time period in question are somewhat limited, and many of the persons who may have some knowledge of the subject are no longer under our employment, we are simultaneously requesting information from Rowena Michaels under freedom of information to help us pinpoint our search for any additional information. As requested, if we do obtain anything further, it will be fowarded to your attention as soon as possible.

REPLIES TO QUESTIONS 1 - 21

1. James A. Hobbs

2. James A. Hobbs

3. Doyle Derrick, Al Kelly, Billy Lavender, Jeff Watts

4. Dillard Smith Construction Co.

5. 1 (one) drum Inerteen oil - approx 25 gal.
4 (four) drums - clay and rags
11 (eleven) - sealed capacitors
1 (one) - misc. debris

All of above mentioned items were shipped to PCB Inc. of Missouri for disposal.

6. Homer Galloway, Willard Anderson

4001 Industry Drive
Chattanooga, TN 37416
(615) 894-4336

July 11,1996

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4001 Industry Drive
Chattanooga, TN 37416
(615) 894-4336

Dillard Smith
Construction
Company

7. Information unknown

8. Merl Offield ? - Transporter for PCB Inc. of MO.

9. Information Unknown

10. Information Unknown

11. Shipping manifest for material from M & M Mars and Combustion Engineers.

12a. Shipping manifests (same as above # 11) and Certificate of Destruction.

13. Information Unknown

14. Sales Brochure from Envirosure, Inc. - source unknown

15. Information Unknown

16. Information Unknown

17. per manifest labeled # 1 - M & M Mars:

a. thru h. - Information Unknown

i. 3/8/84

j. Information Unknown

k. PCB Inc. of Missouri
2100 Wyandotte Street
Kansas City, MO 64108

605-256-6254

l. M & M Mars, Inc.

m. M & M Mars, Inc.
Peerless Rd.
Cleveland, TN 37311

17. per manifest labeled # 2 - Combustion Engineers:

a. 1 drum (approx. 25 gal.) - Inerteen oil
4 drums - clay and rags
11 - capacitors

4001 Industry Drive
Chattanooga, TN 37416
(615) 894-4336

HAZARDOUS WASTE MANIFEST

PCB INC. OF MISSOURI EPA -7- KANSAS
PCB INC. OF MISSOURI EPA MOD-980633044

MANIFEST DOCUMENT NUMBER

SHIPPER NUMBER

PCB INC. OF MISSOURI
NAME OF CARRIER (SCAC)

CARRIER NUMBER

IDENTIFICATION

	12 DIGIT EPA ID #	COMPANY NAME, MAILING ADDRESS, AND TELEPHONE NUMBER	DATE SHIPPED OR RECEIVED
GENERATOR/ SHIPPER		CHAMPION Dillard Smith Cons 4001 Industry Dr TN 37414	
TRANSPORTER # 1		PCB INC. OF MO. 2100 WYANDOTTE K.C.MO. 64108	
TRANSPORTER # 2 (if required)			
TSDF TREATMENT STORAGE OR DISPOSAL FACILITY		PCB INC. OF MO. 2100 WYANDOTTE K.C.MO. 64108	
TSDF TREATMENT STORAGE OR DISPOSAL FACILITY			

WASTE INFORMATION

NO. OF UNITS & CONTAINER TYPE	HM	EPA HAZ. WASTE ID #	DESCRIPTION AND CLASSIFICATION (Proper Shipping Name, Class and Identification Number per 172.101, 172.202, 172.203	UN # or NA #	EXEMPTION OR NO LABELS REQUIRED	FLASH POINT (IN °C) WHEN REQ'D	UNITS WT/VOL	TOTAL QUANTITY	RATE	CHARGES (For Carrier Use Only)
1		PCBs	DEBRI	2315	PCB & ORM-E RQ					

SPECIAL HANDLING INSTRUCTIONS DAM UP SPILLS/PREVENT PERSONAL CONTACT/PREVENT WATER CONTAMINATION

If an RQ commodity is spilled on a waterway or adjoining land, the incident must be promptly reported to the Federal government at 1-800-424-8802 (toll free) or 202-426-2675 (toll call). If other DOT Hazardous Materials are discharged creating a serious situation, call shipper's telephone number or Chemtrec 1-800-424-9300 immediately.

COMMENTS
CONTACT 605-256-6254 IF SPILLAGE OCCURS.

PLACARDS TENDERED
Yes ☐ No ☐

FROM: M.+M Marb P.O. No. 506-26185
PEERLESS Rd
CLEVELAND, TN 37311

CERTIFICATION

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation and the U.S. Environmental Protection Agency

Willard Hardman 3/8/84
GENERATOR'S SIGNATURE DATE

This is to certify acceptance of the hazardous waste shipment.

Mark D Hill 3-8-84
TRANSPORTER #1 SIGNATURE & DATE TRANSPORTER #2 SIGNATURE & DATE (if required)

This is to certify acceptance of the hazardous waste for treatment, storage or disposal.

TSDF SIGNATURE DATE

2

TRANSPORTER #1

HAZARDOUS WASTE MANIFEST

PCB INC. OF MISSOURI EPA -7- KANSAS
PCB INC. OF MISSOURI EPA MOD-980633044

MANIFEST DOCUMENT NUMBER

SHIPPER NUMBER

PCB INC. OF MISSOURI
NAME OF CARRIER (SCAC)

CARRIER NUMBER

IDENTIFICATION

	12 DIGIT EPA ID #	COMPANY NAME, MAILING ADDRESS, AND TELEPHONE NUMBER	DATE SHIPPED OR RECEIVED
GENERATOR/ SHIPPER		Dillard Smith Cons 4001 Industry Dr. Chattanooga Tn. 37411	
TRANSPORTER # 1		**PCB INC. OF MO. 2100 WYANDOTTE K.C.MO. 64108**	
TRANSPORTER # 2 (if required)			
TSDF TREATMENT STORAGE OR DIS-POSAL FACILITY		**PCB INC. OF MO. 2100 WYANDOTTE K.C.MO. 64108**	
TSDF TREATMENT STORAGE OR DIS-POSAL FACILITY			

WASTE INFORMATION

NO. OF UNITS & CONTAINER TYPE	HM	EPA HAZ. WASTE ID #	DESCRIPTION AND CLASSIFICATION (Proper Shipping Name, Class and Identification Number per 172.101, 172.202, 172.203	UN # or NA #	EXEMPTION OR NO LABELS REQUIRED	FLASH POINT (IN °C) WHEN REQ'D	UNITS WT/VOL	TOTAL QUANTITY	RATE	CHARGES (For Carrier Use Only)
1 DR 4 DR 11 DR		PCB-	s INERTEEN - APPROX 25% CLAY + RAGS CAPACITORS 908.5 # (8 @ 600 # 1 @ 93.5 # 2 @ 215 #)	2315	PCB & ORM-E RQ					

SPECIAL HANDLING INSTRUCTIONS DAM UP SPILLS/PREVENT PERSONAL CONTACT/PREVENT WATER CONTAMINATION

If an RQ commodity is spilled on a waterway or adjoining land, the incident must be promptly reported to the Federal government at 1-800-424-8802 (toll free) or 202-426-2675 (toll call). If other DOT Hazardous Materials are discharged creating a serious situation, call shipper's telephone number or Chemtrec 1-800-424-9300 immediately.

COMMENTS
CONTACT 605-256-6254 IF SPILLAGE OCCURS.

PLACARDS TENDERED Yes ☐ No ☐

FROM: Combustion Engineers
Chattanooga, TN.

CERTIFICATION

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation and the U.S. Environmental Protection Agency

Dillard Andrson 3/8/84
GENERATOR'S SIGNATURE DATE

This is to certify acceptance of the hazardous waste shipment.

Mel O Field 3-6-84
TRANSPORTER #1 SIGNATURE & DATE TRANSPORTER #2 SIGNATURE & DATE (if required)

This is to certify acceptance of the hazardous waste for treatment, storage or disposal.

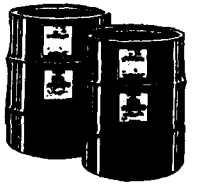
TSDF SIGNATURE DATE

2

TRANSPORTER #1

EPA ID MOD#980633044

P.C.B., INC.
OF
MISSOURI



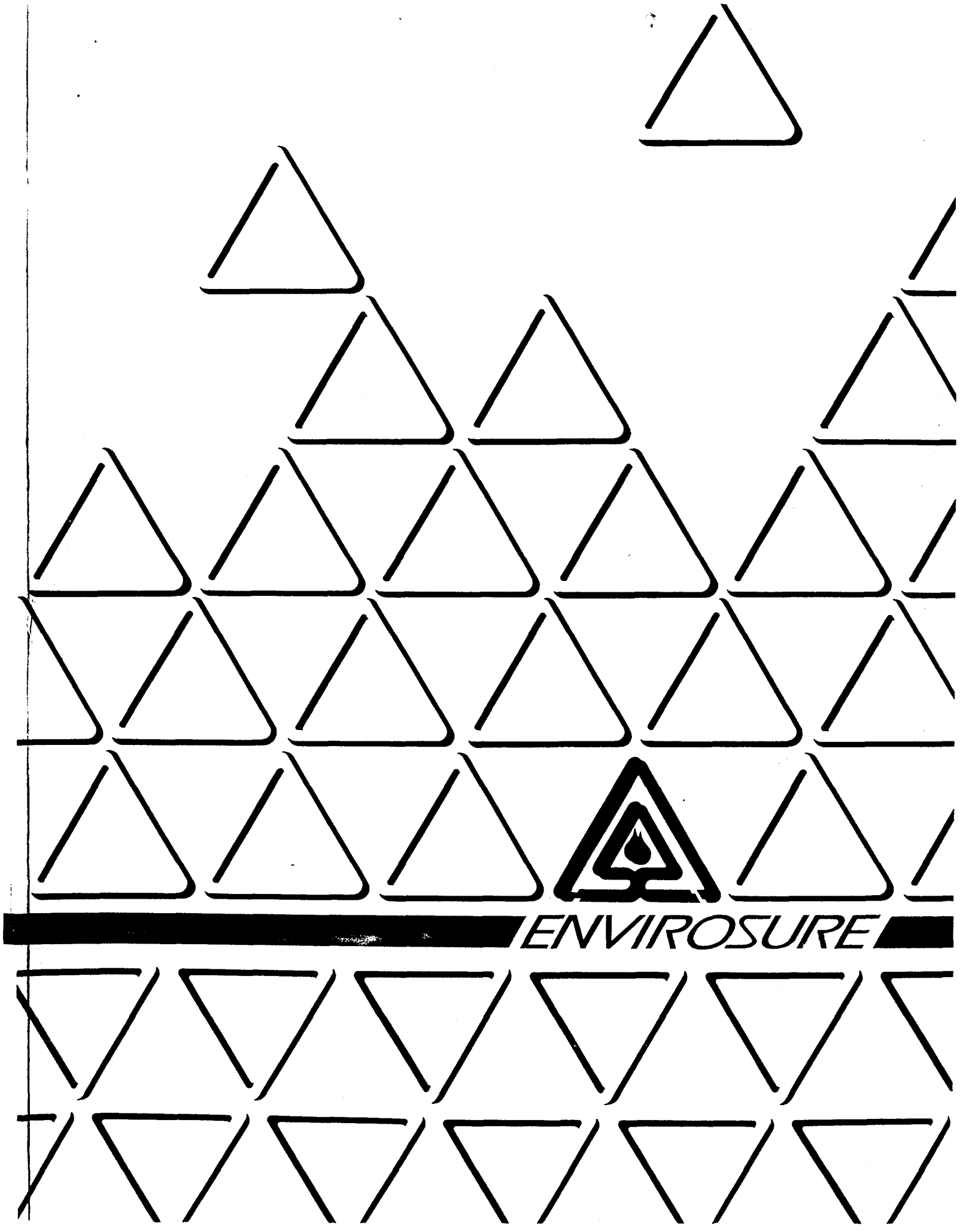
Certificate of Destruction

P.C.B., Inc. Of Missouri has destroyed waste received from DILLARD SMITH CONSTRUCTION - M & M MARS as identified in hazardous Waste Manifest # 0746 and hereby certifies such destruction as of this 12 day of July 198 4

Generator Dillard Smith Construction/
M & M Mars
Address 4001 Industry Drive
Chattanooga, Tennessee 37416

By

Title General Manager


ENVIROSURE

HE ENVIROSURE DGE: ADVANCED ECHNOLOGIES ND TOTAL ERVICE APABILITY

Environmental regulations, public concern and the economic considerations of proper risk management are demanding more sophisticated waste management services that can provide generators low risk at a reasonable cost.

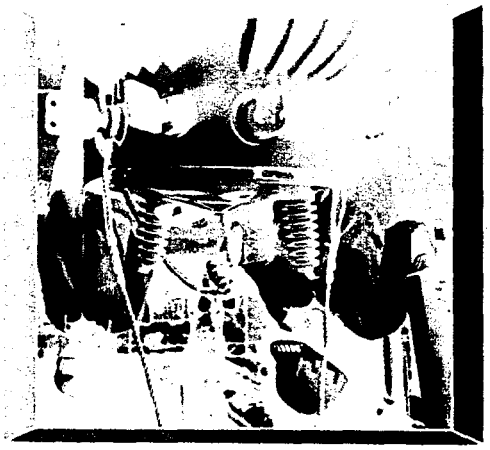
These driving forces are moving industrial and hazardous waste management away from associated risks of the landfill disposal alternative and toward volume reduction, resource recovery, or elimination through chemical treatment and incineration technologies. The EPA will be regulating major categories of organic wastes out of landfills. The public appears relentless in its effort to prevent new landfill owners from obtaining permits, and while existing capacity is rapidly disappearing, many waste disposal companies chose not to pursue final permitting. The potential liability associated with landfill disposal has resulted in uninsurable risk, and many insurers have refused to provide coverage for non-sudden pollution.

Envirosure Management Corporation is meeting the needs of our clients by providing a broad range of waste management services built around techniques and technologies for waste treatment, resource recovery, incineration, and volume reduction of hazardous, toxic and other special wastes. Some of our unique capabilities include the processing of organic solids and sludges into a blended fuel for energy recovery and incineration in permitted and properly

managed cement kilns, oxidation of aqueous cyanide solution, the detoxification of PCB contaminated oils and the recovery for reuse of valuable metals from PCB transformers.

Envirosure Management Corporation is currently developing new and improved processes in the areas of rapid oxidation of aqueous organics, cost effective chemical destruction of high concentrated PCB oil and processes for carrying out many of these technologies at our client's site.

ENVIROSURE is dedicated to solving the difficult problems of low risk, cost effective waste management, and is confident that we can provide you with unique alternatives.



ENVIROSURE DELIVERS PCB SERVICES

TOTAL WASTE MANAGEMENT

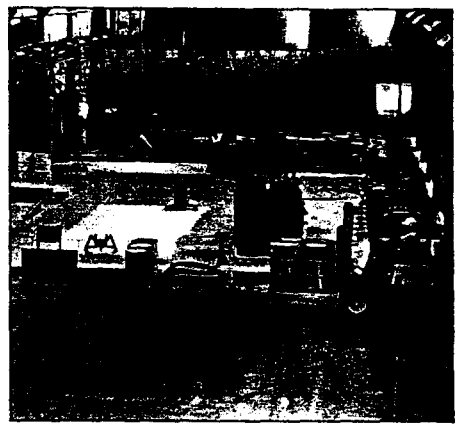
Envirosure Management Corporation is proud to offer our customers a full range of environmental compliance and disposal services, enabling us to become one of the few and uniquely qualified "total waste management" companies in the country.

Since our inception, ENVIROSURE has successfully provided our customers the ultimate in safe transportation and disposal of PCB liquid and solid wastes. Our excellent contractual relationships with many of the EPA permitted and approved PCB incineration and chemical landfill facilities, coupled with our own highly trained, professional and experienced field service personnel, has qualified ENVIROSURE to offer the very best in customer services and project management expertise.

Although we continue to offer our customers the more traditional PCB disposal methods such as incineration and secure chemical landfill disposal, ENVIROSURE includes in its total waste management spectrum innovative reclamation/reuse technologies as a sound and cost effective PCB waste treatment/disposal alternative.

As testimony to the quality of our total waste management services, our expanding customer base includes many satisfied repeat customers, including large public utilities, electrical contractors, government agencies and Fortune 500 companies.

TOTAL PROJECT MANAGEMENT SERVICES



Envirosure Management Corporation offers total project management services tailored to meet individual situation requirements. These services include:

- **Transportation and treatment/ disposal:** All PCB wastes such as contaminated oils, solvents, soil and debris, whether drummed or in bulk, large and small capacitors, and PCB articles such as transformers and other contaminated electrical equipment, whether intact or drained.
- **Turnkey services:** An option to employ our mobile field service crews to handle all aspects of PCB project management, to include sampling and analysis, spill response, on-site draining/decommissioning, material handling, rigging and loading, labeling and manifesting and transportation arrangements.
- **Turnkey retrofit:** Total coordination of electrical disconnect, rigging and loading, transportation, disposal and installation of new transformer units.

- **Retrofill:** Transformers in good condition and with a long life expectancy are candidates for retrofill. ENVIROSURE has been very successful in reducing PCB concentrations to "PCB Contaminated" (less than 500 ppm), and "Non-PCB" (less than 50 ppm) status through use of performance-proven retrofill procedures in conjunction with our extensive knowledge of diverse types of electrical transformers and related equipment.
- **Remedial action services:** Total on-site project management for the clean-up and restoration of abandoned dump sites, PCB spills, and closures of pits, ponds, and lagoons.

ENVIROSURE'S flexibility in providing a variety of available PCB waste treatment/disposal services enables us to safely contain, remove and transport PCB wastes in coordination with our customer's schedules, thereby avoiding unnecessary disposal facility delays, as well as the possibility of potentially hazardous intermediate on-site storage.

PCB DISPOSAL SERVICES

Traditional PCB Management Services

Through our contractual agreements with many of the country's foremost EPA approved and permitted PCB disposal facilities, ENVIROSURE offers the following traditional PCB Management Services:

- Capacitor destruction by shredding and high-temperature incineration
- Transformer decommissioning
- Secure chemical landfill of decommissioned transformer carcasses and other PCB solid wastes
- High-temperature incineration of PCB oils, solvents, sludges and shreddable debris

Alternate PCB Management Technologies

In addition to traditional disposal methods, ENVIROSURE offers the following alternate and cost effective PCB treatment/disposal technologies:

- **Capacitor carcass reclamation:** Capacitor cores are removed, shredded, bagged, and drummed for transport to an EPA approved and permitted PCB incineration facility. The remaining metal carcass is detoxified utilizing a proprietary solvent decontamination rinse process which insures removal of PCB to less than detectable levels (less than 2 ppm). The "clean" metal is recycled by a foundry for its scrap value.
- **Transformer reclamation/copper recovery:** Transformer units (of any PCB concentration) are drained of all free-flowing liquid, and the liquid prepared for transport to an EPA approved PCB incineration or chemical treatment facility. The drained unit undergoes a proprietary PCB extraction and decontamination procedure allowing the carcass to be opened, dismantled, and separated into its component parts. These component parts, once cleansed of all detectable PCB residue (less than 2 ppm) are reclaimed/recycled for scrap value.
- **Chemical detoxification of transformer oils:** Transformer mineral oils containing PCB concentrations of less than 4,000 ppm may be chemically treated to break down the PCB components and subsequently remove them from the oil to below detectable levels (less than 2 ppm), allowing the reclaimed oil to be sold for reuse.

ULTIMATE CUSTOMER SERVICES

Envirosure Management Corporation is fully staffed with uniquely qualified customer service, sales, operations and technical professionals geared toward immediate response to our customer's waste management concerns and ultimate needs.

Internal paperwork, waste approval, and reporting systems are streamlined to provide optimum response and efficient follow-through.

In short, a call to ENVIROSURE insures total performance serviceability and the ultimate in customer services.

Envirosure Management Corporation takes great pride in our quality disposal services and total waste management expertise, and offers these services.

ANALYTICAL SERVICES:
- Full service laboratory
- Waste evaluation and characterization
- Environmental analysis
- GC/MS, AA, polargraphy, BTU, flash point
- Express and rush services available

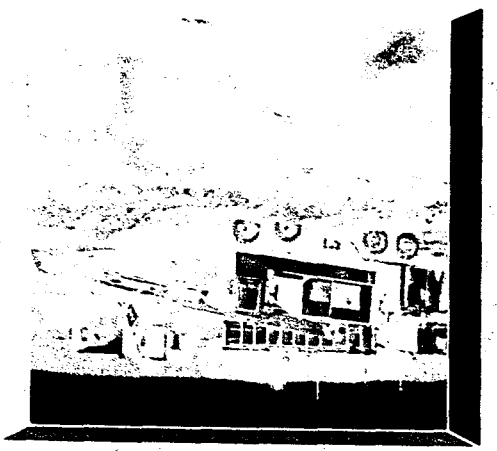
TREATMENT TECHNOLOGIES:
- Wastewater treatment
- Fuels blending
- Oxidation/reduction
- Advanced technologies for detoxification, destruction, and reuse

REMEDIAL SERVICES:
- Total on-site evaluation and remediation
- Excavation – hazardous and non-hazardous wastes
- Underground storage tank removal
- Pit, pond and lagoon closure
- Packaging of laboratory chemicals
- Asbestos removal

PCB MANAGEMENT SERVICES:
- Turnkey project management
- Sampling and analysis
- On-site services
- Transformer reclamation/metals recovery
- Oil detoxification and incineration
- Capacitor destruction
- Retrofill, retrofit

TRANSPORTATION:
- Full service fleet for hazardous waste transport
- Fully permitted and insured
- Qualified and trained drivers
- Nation-wide service capabilities

Envirosure Management Corp.
333 Ganson St.
Buffalo, NY 14203
(716) 854-3611



ENVIROSURE DELIVERS REMEDIAL ACTION SERVICES

Envirosure Management Corporation's Remedial Services division has successfully provided major industry, federal and state agencies, and the private sector with unsurpassed total waste management and turnkey services.

Our professional and highly trained staff of project managers, supervisors, equipment operators, chemists and field service personnel qualify ENVIROSURE to offer fully comprehensive remedial action capabilities and total project management expertise.

ENVIROSURE'S Remedial Action Services include

- Remedial site investigation
- Environmental, legal and risk management consulting
- Complete analytical service
- On-site abatement and removal
- Excavation – hazardous and non-hazardous wastes
- Drum staging and qualification
- Demolition
- Decontamination
- Rigging and loading
- Above and underground storage tank removal and cleaning
- Pit, pond and lagoon closures, dewatering
- Packaging of laboratory chemicals
- Asbestos removal
- Complete PCB services
- Specialty disposal and transportation services

Site Management Personnel

- Project managers
- Project supervisors
- Heavy and light equipment operators
- Chemists
- Chemical technicians

Support Services

- Health and safety management
- Environmental and legal departments
- Analytical services
- Risk management: bonding and insurance

TOTAL PROJECT MANAGEMENT

Health and Safety, Risk Management

ENVIROSURE'S remedial services begin with careful consideration of total job scope and risk potential in performance of our total project management proposal. Health and safety concerns are addressed immediately in reference to the surrounding environment and site personnel requirements. ENVIROSURE'S Risk Management team surveys and establishes our customer's project needs for bonding and insurance, as this expertise has become prevalent as an important prerequisite for most remedial projects.

Analytical Services

Analytical services and procedures become essential to remedial action as ground and surface water quality identification may be required. Abandoned areas with potentially contaminated wastes or soil may require extensive quality control testing in order to accurately define treatability and ultimate disposal options. Envirosure's complete Analytical Service ensures accurate results allowing development of true waste characterization and a sound disposal/treatment scenario.

On-Site Operations

Effective remedial on-site operaons require personnel who are experienced and highly trained in total project management and field supervision. Envirosure's professional project manager, supervisors, operators, chemists, and field technicians meet and exceed all health and safety awareness and training requirements specific to the particular remedial task, including response and performance of on-site emergency spill abatement procedures. ENVIROSURE'S Remedial services are performed with the best heavy/light equipment and materials available to provide quality completion and cost effective customer satisfaction.

Transportation and Disposal

ENVIROSURE'S specialty transportation and disposal options coincide and complement one another, as we are able to provide transport vehicles specific to the nature of the waste materials to be moved off-site for final treatment and disposal. Our transporters undergo a detailed service, permit and equipment audit on a regular basis to ensure compliance with ENVIROSURE'S quality standards for waste management. Our many disposal options include chemical treatment, detoxification, stabilization, incineration, fuels blending, and traditional secure landfill. As with our transporters, only fully permitted and quality audited facilities enjoy ENVIROSURE'S disposal opportunities.

Upon completion of a remedial project, ENVIROSURE provides complete project closeout data to include accurate invoicing, total waste quantity tracking, and manifest/destruction/disposal certificates.

Envirosure Management Corporation takes great pride in our quality disposal services and total waste management expertise, and offers these services.

ANALYTICAL SERVICES:
- Full service laboratory
- Waste evaluation and characterization
- Environmental analysis
- GC/MS, AA, polargraphy, BTU, flash point
- Express and rush services available

TREATMENT TECHNOLOGIES:
- Wastewater treatment
- Fuels blending
- Oxidation/reduction
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Buffalo, NY 14203
(716) 854-3611

PCB UPDATE

A PCB Regulatory Update from Envirosure Management Corp.

EPA Prohibits Use of PCB Transformers by 1990

Effective October 1, 1990, the U.S. Environmental Protection Agency (EPA) will prohibit the use of PCB transformers "in or near commercial buildings." These buildings include public assembly, educational, institutional and residential properties, and stores, office buildings and transportation centers (i.e. airport terminal buildings, and subway, bus or train stations).

According to 40 CFR Part 761.30, you must remove from service and properly dispose of or reclassify through retrofill (to PCB-contaminated or non-PCB status) any PCB transformer currently in service or in storage for reuse prior to October 1, 1990. If you do not comply with these regulations, you could be responsible for severe fines as mandated under the Toxic Substances Control Act (TSCA).

ENVIROSURE MANAGEMENT CORP. is a service-oriented company that provides safe transportation, treatment and disposal of PCB liquid and solid wastes. As a leader in PCB project management, ENVIROSURE can provide you with complete transformer retrofit and retrofill services to ensure that you are in compliance with the 1990 federal regulation.

Since it is most important that you are fully informed of these current federal regulations, ENVIROSURE provides the following reprint of 40 CFR Part 761 for your information and reference.

ENVIRONMENTAL PROTECTION AGENCY OFFICE OF PESTICIDES AND TOXIC SUBSTANCES
40 CFR PART 761

(OPTS 62035D; TSH FRL)
POLYCHLORINATED BIPHENYLS IN ELECTRICAL TRANSFORMERS

AGENCY: Environmental Protection Agency (EPA)

ACTION: Final Rule

SUMMARY: This final rule amends portions of an existing EPA rule concerning the use of polychlorinated biphenyls (PCBs) by placing additional restrictions and conditions on the use of PCB Transformers (electrical transformers containing 500 parts per million or greater PCBs.
This rule: 1) prohibits the use of higher secondary voltage (480 volts and above) network PCB Transformers in or near commercial buildings after October 1, 1990, 2) requires, by October 1, 1990, the installation of enhanced electrical protection on lower secondary voltage network PCB Transformers and higher secondary voltage radial PCB Transformers in use in or near commerical buildings, 3) prohibits further installation of PCB Transformers in or near commerical buildings after October 1, 1985, 4) requires the registration, by December 1, 1985, of all PCB Transformers with fire response personnel and building owners, 5) requires the registration, by December 1, 1985, of all PCB Transformers with fire response personnel and building owners, 5) requires the marking, by December 1, 1985, of the exterior of all PCB Transformer locations, and 6) requires the removal, by December 1, 1985, of stored combustibles located near PCB Transformers.
EPA is also requiring that owners of PCB Transformers involved in fire-related incidents **immediately notify the National Response Center,** and, take measures as soon as practically and safely possible to **contain any potential releases of PCBs or imcomplete combustion products to water.**

FOR FURTHER INFORMATION CONTACT:

Edward A. Klein,
Director, TSCA Assistance Office (TS-799),
Office of Toxic Substances
Environmental Protection Agency,
Room: E-543,
401 M. ST., SW.,
Washington, D.C. 20460,

Toll free: (800-424-9065),
In Washington, D.C.: (544-1404)
Outside the USA:
(202-554-1404),

SUMMARY OF THE FINAL RULE

Under section 6(e) (2) (B) of TSCA, EPA can authorize a use of PCBs provided that the use "will not present an unreasonable risk of injury to health or the environment." EPA's August 1982 decision to allow the continued use of electrical transformers containing PCBs was based on the reported low frequency of leaks and spills of PCBs from this equipment compared to the high costs associated with replacing this equipment with substitute transformers or requiring secondary containment to limit the spread of spilled materials.

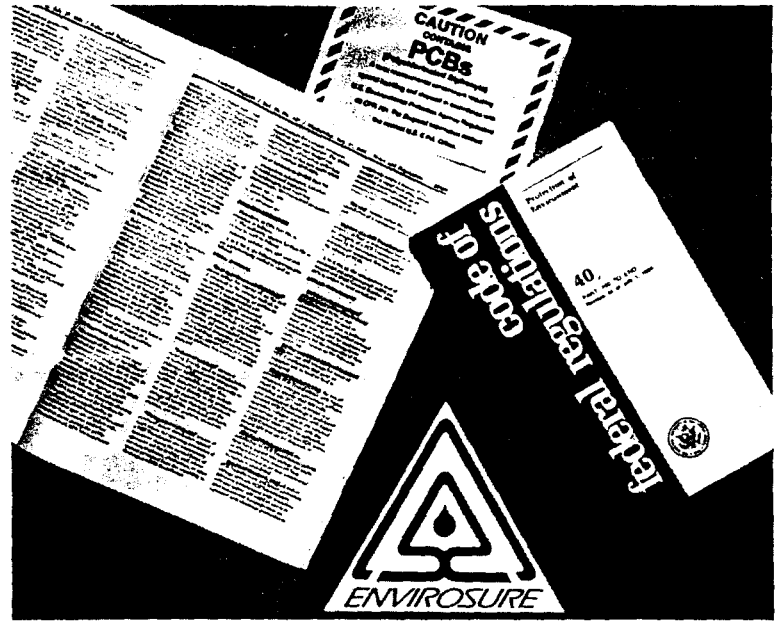
EPA subsequently undertook an evaluation of the fire-related risks posed by the continued use of PCB Transformers, and the costs and benefits of measures designed to reduce those risks. On October 11, 1984, EPA issued a Proposed Rule which contained EPA's determination that PCB Transformer fires (fires involving transformers containing greater than 500 ppm PCBs), particularly fires which occur in or near buildings, do present risks to human health and the environment. EPA reached this determination after considering the extreme toxicity of materials which can be formed and released during fires involving this equipment, as well as the potential for human and environmental exposures to these compounds from a singled incident, and the expected frequency of incidents over the remaining useful life of this equipment.

EPA further determined that the continued use of PCB Transformers without additional restrictions does present an unreasonable risk of injury to health and the environment. EPA reached this determination after considering the risks posed, the costs of cleanup following these incidents, the availability of adequate substitute materials, and the costs and benefits associated with risk reduction measures. EPA did, therefore, propose additional regulatory controls on the use of this equipment.

EPA proposed to require: 1) the immediate registration of all PCB Transformers with appropriate fire department jurisdictions, and the immediate registration with building owners of all PCB Transformers located in or near buildings, 2) the immediate marking of the exterior of the vault door, machinery room door, means of egress, or grate(s) accessing a PCB Transformer with PCB identification labels 3) the immediate removal of stored combustibles from PCB Transformer locations,

4) the installation, by July 1, 1988, of additional electrical protective devices on PCB Transformers in or near buildings in high secondary voltage system (480/277 volt systems), and 5) the isolation, by July 1, 1988, of all PCB Transformers in or near buildings from building ventilation systems, building ductwork, and openings in construction to reduce the widespread contamination of structures and the environment by smoke and soot in the event of a PCB Transformer fire. In addition, to facilitate monitoring compliance with the isolation requirements, EPA proposed that PCB Transformer owners maintain records of their efforts in isolating transformers through the completion of PCB Smoke Spread Reduction Plans (PCB-SSRPs).

Finally, in the event of a PCB Transformer fire, EPA proposed to require PCB Transformer owners to take immediate measures to contain potential water discharges, and to report all PCB Transformer fire-related incidents to the National Response Center (NRC) prior to the initiation of cleanup efforts.



This final rule modifies and clarifies some of the requirements presented in the Proposed Rule as a result of information and comments provided to the Agency during public comment periods and at the public hearing. In developing the Proposed Rule, EPA evaluated the risks posed by PCB Transformer fires in or near buildings by using an office building setting to evaluate generically the nature of and potential for human and environmental exposures to PCBs and incomplete combustion products. EPA determined that additional control measures, principally the isolation of PCB Transformers from building ventilation equipment and ductwork, were necessary to reduce the risks posed by the continued use of this equipment.

During the public comment period for the Proposed Rule, EPA received extensive comments in three specified areas, and has modified the final rule accordingly. First, many comments received in response to the Proposed rule suggested that EPA consider evaluating separately the fire-related risks posed by the continued use of PCB Transformers in industrial locations versus the fire-related risks posed by the use of PCB Transformers in or near buildings, such as office buildings, stores, hospitals and schools (hereafter, all non-industrial, non-substation buildings will be referred at as "commercial buildings"). **This final rule adopts this suggestion and addresses the use of PCB Transformers in or near industrial buildings separately from the use of PCB Transformers in or near commercial buildings.**

Second, many comments on the Proposed Rule discussed the probability of PCB Transformer failures and fires, and suggested that certain types of PCB Transformer installations, network installations with higher secondary voltages (secondary voltages of 480 volts and above, including 480/277 volt secondaries), may be particularly likely to be involved in fire-related incidents. These comments suggest that if EPA were to pursue additional restrictions on the use of PCB Transformers, these installations should be the subject of more stringent control measures. In response to these comments, this final rule considers factors such as the relative probabilities of failures and fires in different types of PCB Transformer installations and places more stringent controls on those transformers which EPA believes pose higher risks of failures and fires.

Finally in response to comments on the Proposed Rule, in this final rule, EPA has increased its emphasis on the prevention of PCB Transformer fires through increased electrical protection, and, decreased its emphasis on the use of isolation measures to minimize the spread of already formed and/or released contaminants.

This final rule prohibits:

1. The continued use of higher secondary voltage network PCB Transformers (network PCB Transformers with secondary voltages at or above 480 volts, including 480/277 volt systems) in or near commercial buildings beyond October 1, 1990.

2. The further installation of PCB Transformers (which have been placed into storage for reuse) in or near commercial buildings.

This final rule also requires:

1. The installation, by October 1, 1990, of enhanced electrical protection on lower secondary voltage network PCB Transformers and on higher secondary voltage radial PCB Transformers (radial PCB Transformers with secondary voltages at or above 480 volts, including 480/277 volt systems) used in or near commercial buildings.

2. The registration by December 1, 1985 of all PCB Transformers with fire departments or fire brigades with primary response function, and, the registration, by December 1, 1985, of all PCB Transformers located in or near buildings with building owners.

3. The marking, by December 1, 1985, of the exterior of all PCB Transformer locations (excluding grates and manhole covers).

4. The removal, by December 1, 1985, of combustible materials stored within a PCB Transformer enclosure, within 5 meters of a PCB Transformer enclosure, or within 5 meters of an unenclosed PCB Transformer.

THEREFORE, 40 CFR PART 761 IS AMENDED AS FOLLOWS:

1). The authority citation for Part 761 is revised to read as follows:

AUTHORITY: 15 U.S.C. 2605, 2607, and 2611.

2). In § 761.3, the following paragraphs are alphabetically added to read as follows:

§ 761.3 ***Definitions.***

****

*"**In or Near Commerical Buildings**" means within the interior of, on the roof of, attached to the exterior wall of, in the parking area serving, or within 30 meters of a non-industrial non-substation building. Commercial buildings are typically accessible to both members of the general public and employees, and include: (1) public assembly properties, (2) educational properties, (3) institutional properties, (4) residential properties, (5) stores, (6) office buildings, and (7) transportation centers (e.g., airport terminal buildings, subway stations, or train stations).*

****

*"**Industrial building**" means a building directly used in manufacturing or technically productive enterprises. Industrial buildings are not generally or typically accessible to other than workers. Industrial buildings include buildings used directly in the production of power, the manufacture of products, the mining of raw materials, and the storage of textiles, petroleum products, wood and paper products, chemicals, plastics and metals.*

****

*"**Manned Control Center**" means an electrical power distribution control room where the operating conditions of a PCB Transformer are continuously monitored during the normal*

hours of operation (of the facility), and, where the duty engineers, electricians, or other trained personnel have the capability to deenergize a PCB Transformer completely within 1 minute of the receipt of a signal indicating abnormal operating conditions such as an overtemperature condition or overpressure condition in a PCB Transformer.

****

*"**On site**" means within the boundaries of a contiguous property unit.*

****

*"**Rupture of a PCB Transformer**" means a violent or non-violent break in the integrity of a PCB Transformer caused by an overtemperature and/or overpressure condition that results in the release of PCBs.*

****

3. In §761.30, the introductory text of paragraph (a) and paragraph (a) (1) are revised and OMB Control Number 2070-0073 is added to read as follows:

§ 761.30 Authorizations

*(a) **Use in and servicing of transformers (other than railroad transformers).** PCBs at any concentration may be used in transformers (other than in railroad locomotives and self-propelled railroad cars) and may be used for purposes of servicing including rebuilding these transformers for the remainder of their useful lives, subject to the following conditions:*

*1). **Use conditions.** (i) As of October 1, 1985, the use and storage for reuse of PCB Transformers that pose an exposure risk to food or feed is prohibited.*

*(ii) **As of October 1, 1990,** the use of network PCB Transformers with higher secondary voltages (secondary voltages equal to or greater than 480 volts, including 480/277 volt systems) in or near commercial buildings is prohibited. Network PCB Transformers with higher secondary voltages which are removed from service in accordance with this requirement must either be reclassified to PCB Contaminated or non PCB status, placed into storage for disposal, or disposed.*

*(iii) **As of October 1, 1985,** the installation of PCB Transformers (which have been placed into storage for reuse or which have been removed from another location) in or near commercial buildings is prohibited.*

*(iv) **As of October 1, 1990,** all radial PCB Transformers and lower secondary voltage network PCB Transformers (network transformers with secondary voltages below 480 volts) in use in or near commercial buildings must be equipped with electrical protection to avoid transformer failures caused by high current faults. Current-limiting fuses or other equivalent technology must be used to detect sustained high current faults and provide for complete deenergization of the transformer within several tenths of a second of detection, before transformer failure occurs. The installation, setting, and maintenance of current-limiting fuses or other equivalent technology to avoid PCB Transformer failures from sustained high current faults must be completed in accordance with good engineering practices.*

*(v) **As of October 1, 1990,** all radial PCB Transformers with higher secondary voltages (480 volts and above, including 480/277 volt systems) in use in or near commercial buildings must (in addition to the requirements of paragraph (a) (1) (iv) of this section) be equipped with protection to avoid transformer failures caused by sustained low current faults.*

(A) Pressure and temperature sensors (or other equivalent technology which has been demonstrated to be effective in the early detection of sustained low current faults) must be used in these transformers to detect sustained low current faults.

(B) Disconnect equipment must be provided to insure complete deenergization of the transformer in the event of a sensed abnormal condition (e.g., an overpressure or overtemperature condition in the transformer), caused by a sustained low current fault. The disconnect equipment must be configured to operate automatically within 30 seconds to 1 minute of the receipt of a signal indicating an abnormal condition from a sustained low current fault, or can be configured to allow for manual deenergization from a manned on-site control center upon the receipt of an audio or visual signal indicating an abnormal condition caused by a sustained low current fault. Manual deenergization from a manned on-site control center must occur within 1 minute of the receipt of the audio or visual signal indicating an abnormal condition caused by a sustained low current fault. If automatic operation is selected and a circuit breaker is utilized for disconnection, it must also have the capability to be manually opened if necessary.

(C) The enhanced electrical protective system required for the detection of sustained low current faults and the complete and rapid deenergization of transformers must be properly installed, maintained sensitive enough (in accordance with good engineering practices) to detect sustained low current faults and allow for rapid and total deenergization prior to PCB Transformer rupture (either violent or non violent rupture) and release of PCBs.

*(vi) **As of December 1, 1985,** all PCB Transformers (including PCB Transformers in storage for reuse) must be registered with fire response personnel with primary jurisdiction (that is, the fire department or fire brigade which would normally be called upon initial response to a fire involving the equipment). Information required to be provided to fire response personnel includes:*

(A) The location of the PCB Transformer(s) (the address(es) of the building(s) and the physical location of the PCB Transformer(s) on the building site(s) and for outdoor PCB Transformers, the location of the outdoor substation).

(B) The principal constituent of the dielectric fluid in the transformer(s) (e.g., PCBs, mineral oil, or silicone oil).

(C) The name and telephone number of the person to contact in the event of a fire involving the equipment.

This information collection requirement was approved by the office of Management and Budget under Control Number: 2070-

*(vii) **As of December 1, 1985,** PCB Transformers in use in or near commercial buildings must be registered with building owners. For PCB Transformers located in commercial buildings, PCB Transformer owners must register the transformers with the building owner of record. For PCB Transformers located near commercial buildings, PCB Transformer owners must register the transformers with all owners of buildings located within 30 meters of the PCB Transformer(s). Information required to be provided to building owners by PCB Transformer owners included but is not limited to:*

(A) The specific location of the PCB Transformer(s).

(B) The principal constituent of the dielectric fluid in the transformer(s) (e.g., PCBs, mineral oil, or silicone oil).

(C) The type of transformer installation (e.g., 208/120 volt network, 208/120 volt radial, 208 volt radial, 480 volt network, 480/277 volt network, 480 volt radial 480/277 volt radial).

*(viii) **As of December 1, 1985,** combustible materials, including, but not limited to paints, solvents, plastics, paper, and sawn wood must not be stored within a PCB Transformer enclosure (i.e., in a transformer vault or in a partitioned area housing a transformer); within 5 meters of a transformer enclosure, or, if unenclosed (unpartitioned), within 5 meters of a PCB Transformer.*

(ix) A visual inspection of each PCB Transformer (as defined in the definition of "PCB" Transformer" under § 761.3) in use or stored for reuse shall be performed at least once every 3 months. These inspections may take place any time during the 3-month periods: January-March, April-June, July-September, and October-December as long as there is a minimum of 30 days between inspections. The visual inspection must include investigation for any leak of dielectric fluid on or around the transformer. The extent of the visual inspections will depend on the physical constraints of each transformer installation and should not require an electrical shutdown of the transformer being inspected.

(x) If a PCB Transformer is found to have a leak which results in any quantity of PCBs running off or about to run off the external surface of the transformer, then the transformer must be repaired or replaced to eliminate the source of the leak. In all cases any leaking material must be cleaned up and properly disposed of according to disposal requirements of § 761.60. Cleanup of the released PCBs must be initiated as soon as possible, but in no case later than 48 hours of its discovery. Until appropriate action is completed, any active leak of PCBs must be contained to prevent exposure of humans or the environment and inspected daily to verify

containment of the leak. Trenches, dikes, buckets, and pans are examples of proper containment measures.

(xi) If a PCB Transformer is involved in a fire-related incident, the owner of the transformer must immediately report the incident to the National Response Center (toll-free 1-800-424-8802; in Washington, D.C. 202-426-2675). A fire-related incident is defined as any incident involving a PCB Transformer which involves the generation of sufficient heat and/or pressure (by any source) to result in the violent or non-violent rupture of a PCB Transformer and the release of PCBs. Information must be provided regarding the type of PCB Transformer installation involved in the fire-related incident (e.g., high or low secondary voltage simple radial system, expanded radial system, network transformer, high or low secondary voltage, primary selective system, primary loop system, or secondary selective system or other systems) and the readily ascertainable cause of the fire-related incident (e.g., high current fault in the primary or secondary or low current fault in secondary). This information collection requirement was approved by the Office of Management and Budget under Control Number: 2070-. The owner of the PCB Transformer must also take measures as soon as practically and safely possible to contain and control any potential releases of PCBs and incomplete combustion products into water. These measures include, but are not limited to:

(A) The blocking of all floor drains in the vicinity of the transformer.

(B) The containment of water runoff.

(C) The control and treatment (prior to release) of any water used in subsequent cleanup operations.

(xii) Records of inspection and maintenance history shall be maintained at least 3 years after disposing of the transformer and shall be made available for inspection, upon request by EPA (OMB Control Number: 2070-0003). Such records shall contain the following information for each PCB Transformer:

(A) Its location.

(B) The date of each visual inspection and the date that leak was discovered, if different from the inspection date.

(C) The person performing the inspection.

(D) The location of any leak(s).

(E) An estimate of the amount of dielectric fluid released from any leak.

(F) The date of any cleanup, containment, repair, or replacement.

(G) A description of any cleanup, containment, or repair performed.

(H) The results of any containment and daily inspection required for uncorrected active leaks.

(xiii) A reduced visual inspection frequency of at least once every 12 months applies to PCB Transformers that utilize either of the following risk reduction measures. These inspections may take place any time during the calendar year as long as there is a minimum of 180 days between inspections.

(A) A PCB Transformer which has impervious, undrained, secondary containment capacity of at least 100 percent of the total dielectric fluid volume of all transformers so contained or

(B) A PCB Transformer which has been tested and found to contain less than 60,000 ppm PCBs (after 3 months of in service use if the transformer has been serviced for purposes of reducing the PCB concentration).

(xiv) An increased visual inspection frequency of at least once every week applies to any PCB Transformer in use or stored for reuse which poses an exposure risk to food or feed. The user of a PCB Transformer posing an exposure risk to food is responsible for the inspection recordkeeping, and maintenance requirements under this section until the user notifies the owner that the transformer may pose an exposure risk to food or feed. Following such notification, it is the owner's ultimate responsibility to determine whether the PCB Transformer poses an exposure risk to food or feed.

4) In § 761.40, paragraph (j) is added to read as follows:

§ 761.40 **Marketing requirements.**

(j) **As of December 1, 1985,** the vault door, machinery room door, fence, hallway, or means of access (other than grates and manhole covers) to a PCB Transformer must be marked with the mark M L. The mark must be placed so that it can be easily read by firemen fighting a fire involving this equipment.

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Suite 105
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209-267-0544

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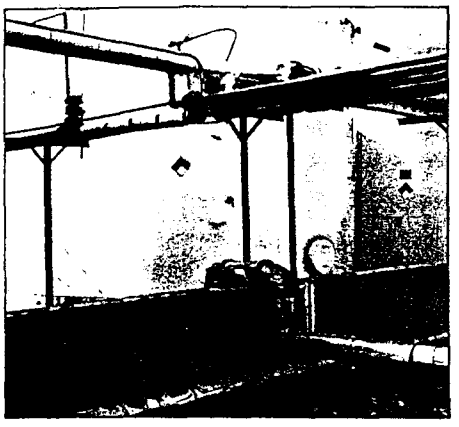
412-941-4635

1111 Lake Cook Road
Buffalo Grove, IL 60090
312-520-1393

9800 Garrison Way
Bloomfield, CO 80020
303-469-6878

P.O. Box 2291
Norman, OK 73070
405-329-6782



Ozonization
Ozone oxidation is currently being developed as a means of destroying cyanides, dissolved organics (TOC) and chlorinated organics in waste waters. Metals are precipitated directly as metal oxides or hydroxides in a self flocculated form.

Phase separation/decantation
Multiphase waste waters are separated into their component parts, utilizing a conical separator, and treated independently as required.

ORGANIC RECLAMATION

Recovery of resources is recognized as a high priority goal by government and industry. ENVIROSURE pursues this goal by offering a wide range of recovery programs. Each program is designed to utilize the positive values of waste materials. The environmental benefits resulting from these innovative programs include recovery/reuse, energy conservation, and decreased reliance on landfills.

FUELS BLENDING

ENVIROSURE offers a total management system for reclamation and reuse of waste flammable solvents and oils as synthetic fuels. Blended products are offered to cement producers for use as an energy supplement in their manufacturing processes.

Two types of liquid wastes are blended to yield the fuel mixture: low chlorinated solvents and oils (less than 2% halogen) and high chlorinated solvents and oil (2-25% halogen). Only those waste types permitted for use in cement kilns will be accepted. In addition, the fuels blending process can accommodate organic solids and sludges by grinding and homogenizing them into the liquid fuel mass. These solid organics would otherwise be candidates for secure landfill disposal. The fuels blending process is an excellent example of ENVIROSURE'S commitment to provide alternatives to land burial of hazardous wastes.

A comprehensive monitoring program is employed to assure the integrity and environmental soundness of the system. Each product batch is blended to meet the exact specifications of the kiln it will provide fuel for. The blended product is analyzed by an independent laboratory to verify content. All product shipments are manifested to the cement kiln affording ENVIROSURE and ultimately the generator a great degree of control over the entire process.

SOLVENT RECOVERY

Our services for reclamation of waste chlorinated solvents represent still another program for resource recovery. Methylene chloride, 1, 1, 1, trichloroethane, trichloroethylene, and perchloroethylene are purified through steam distillation. The resulting high grade solvents are then made available commercially as recovered materials or returned to the generator on a toll basis. Non-recoverable wastes and still bottoms from recovery are introduced into ENVIROSURE'S fuel blending process.

PCB OIL DETOXIFICATION/ TRANSFORMER RECLAMATION

ENVIROSURE offers a process to destroy PCBs present (at levels up to 4,000 ppm) in transformer mineral oils. The oils undergo a proprietary chemical detoxification process designed to reduce the PCB concentration to less than 2 ppm, below detectable levels, thus allowing the decontaminated oils to be recycled for reuse. Another decontamination process is used to detoxify the drained transformer carcass, allowing for the recovery of valuable metals and reduced long-term liability associated with the traditional secure landfill option.

SPECIALTY PRETREATMENT SYSTEMS

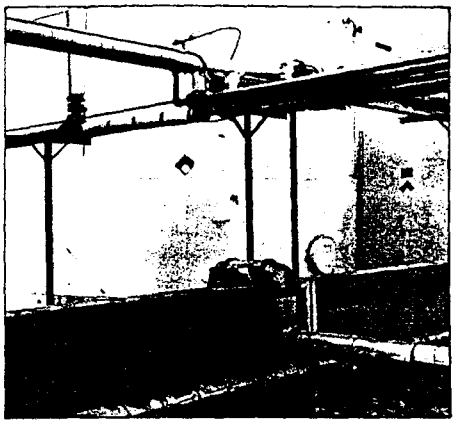
ENVIROSURE employs specialty pretreatment systems for detoxification of hazardous materials which cannot be treated by conventional means. These systems afford generators cost effective solutions for disposal of highly problematic wastes.

Cyanide destruction
Cyanides are converted to carbon dioxide and nitrogen through a 20,000 gallon per day alkaline chlorination process. Additionally, toxic sulfides are converted to sulfates by treatment with hypochlorite.

Chemical reduction/oxidation
Dissolved metals in the waste water are treated to facilitate their removal. Hexavalent chrome is reduced to the non-toxic trivalent state using bisulfate as a reducing agent.

Hydrolysis
Water reactive materials are hydrolyzed in a controlled reaction producing a less volatile waste water which can then be treated through primary treatment systems.

Steam stripping
Steam stripping is a method under development for separating organics from highly acidic or alkaline wastes. The end product is a concentrated organic waste, offering the possibility of both solvent recovery and acid regeneration.



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BLT PROVIDES A BROAD RANGE OF ANALYTICAL SERVICES

We receive a wide variety of hazardous and industrial waste samples requiring a broad range of tests. The analytical task varies from sample to sample depending on the customer's needs and the type of sample. The following list summarizes some of our capabilities.

WASTE CHARACTERIZATION

- Flash point
- BTU
- Viscosity
- % Chlorine in fuels
- % Sulfur in fuels
- EP TOX
- Acidity/alkalinity
- PH
- TOC

INORGANIC ANALYSIS

For:

- % Cyanide
- % Water
- % Sulfide
- % Cr (VI)
- % Nitrogen

Metals analysis by:

- Atomic absorption
- Graphite furnace
- Metal hydride
- Polarography

ORGANIC ANALYSIS

- GC/MS of volatile organics (624)
- GC/MS of acid/base neutral organics (625)
- PCBs
- Pesticides
- Phenols

QUALITY ASSURANCE

To ensure the quality of our data, we employ a stringent quality control program. Exhaustive procedural safeguards are enforced at each link in the chain of custody. BLT is confident of the ability of its technicians, analytical tools and methodology, and offers to rerun any rest on which the results are in question, within the allowed holding time for the sample. If the results of the rerun are significantly different, BLT will provide a full analysis, under the strictest quality control program, at no additional charge. If the rerun is not significantly different, the customer is charged for both tests at the standard rate.

FAST TURNAROUND TIME

BLT provides standard turnaround times of approximately 2-3 weeks on all samples. When a customer needs results faster, we provide express service at additional cost: 48 hours after we receive a sample, the report of results is express mailed to the customer. For less immediate emergencies, customers may use our rush service, at additional cost, in which results are express mailed within 5 business days of receipt.

ENVIROSURE'S BLT LAB DELIVERS ANALYTICAL SERVICES

BLT Technical Services maintains a complete, up to date analytical laboratory. We recognize that quality analytical work is a key factor in the total waste management program offered by our parent company, Envirosure Management Corporation. Therefore, BLT's overriding purpose is to provide our customers with accurate analytical data in a timely manner.

SOLVING HAZARDOUS WASTE PROBLEMS THROUGH LABORATORY ANALYSIS

The proper methodology and skilled interpretation of accurate data can contribute significantly to good solutions to hazardous or industrial waste problems. We appreciate our customers' need for meaningful data. Our test results often determine important consequences. For example, the level of contamination in a waste may impact on treatment or disposal methods. BLT's data is timely, and accurately interpreted to be of maximum value to our customers.

Because of the importance of adhering to standard procedures, our laboratory uses the most current EPA analytical procedures to ensure the uniformity of results. All data is evaluated for accuracy by a rigid quality control program before the results are released to a customer.

BLT specializes in the analysis of environmental samples in complex matrixes. Our highly trained chemists and technicians work with state of the art equipment, allowing us to tackle the most challenging projects. Our expertise can provide our customers with the most cost effective methods of analysis.

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Our services for reclamation of ste chlorinated solvents represent another program for resource overy. Methylene chloride, 1, 1, 1, hloroethane, trichloroethylene, 1 perchloroethylene are purified ough steam distillation. The result- high grade solvents are then made ilable commercially as recovered terials or returned to the generator a toll basis. Non-recoverable stes and still bottoms from recovery introduced into ENVIROSURE'S l blending process.

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TREATMENT TECHNOLOGIES	WASTES PROCESSED
Aqueous Treatment:	**Examples**
Acid-lime neutralization	Plating baths and rinses
Granular activated carbon absorption	Circuit board etchants
	Kettle washings
	Soluble oils
	Water based inks
	Caustic scrubber
	Pickle liquors
	Tanker rinses
	Leachate collection
Pre-Treatment:	**Examples**
Alkaline chlorination	Cyanides bath/rinses
Oxidation/reduction	Sulfides
Ozonation	Hexavalent chromes
Hydrolysis	Oil/water emulsions
Phase separation/decantation	Latex emulsions
Steam stripping	Acid chlorides
Fuels Blending for BTU Recovery:	**Examples**
	Paint solvents
	Waste paint
	Paint sludges
	Ink washes
	Flammable sludges
	Acetone
	Alcohols
	Xylene
	Toluene
	MEK
	MIBK
Chlorinated Solvent Recovery by Distillation:	**Examples**
	Degreasing solvents
	Process wash solvents
	Methylene chloride
	Perchloroethylene
	1, 1, 1-trichloroethane
	Trichloroethylene
Fuels Blending for Destructive Incineration:	**Examples**
	Mixed chlorinated solvents
	Chlorinated still bottoms
	Kettle washings
	Pharmaceutical washes
	Aqueous streams with high organics
Detoxification of PCBs	Transformer mineral oils less than 4,000 ppm

ENVIROSURE DELIVERS TREATMENT TECHNOLOGIES

In order to meet the rigorous demand for hazardous waste management, Envirosure Management Corporation's thrust is toward utilization of innovative treatment technologies.

ENVIROSURE offers alternatives to landfilling by providing processes to significantly reduce the volume and toxicity of wastes. In our treatment facilities, many wastes traditionally designated as landfill candidates are now detoxified by chemical or physical processes; some are reduced to residual stabilized solids and still others are processed to recover resources. We employ state of the art technologies to treat a very wide variety of waste streams. Research and development efforts toward ever more efficient and less costly methods are priorities on our corporate agenda. Our special emphasis to date has been in detoxification of PCB s and in the treatment of difficult to handle industrial wastes. As in all of ENVIROSURE'S operations, personnel with depth of expertise and experience are key factors in providing reliable and timely services.

QUALITY CONTROL

All incoming shipments are sampled upon arrival to verify conformance with the generator's original waste stream specifications as approved by our environmental staff.

ENVIROSURE'S laboratories are staffed with chemists and technicians skilled in waste evaluation and characterization. State of the art analytical equipment is utilized to assure high quality control standards.

WASTE WATER TREATMENT SYSTEM

ENVIROSURE recognizes the need for proper management of industrial waste waters. Our facilities offer proven technologies to detoxify these waste streams. Primary treatment is used to remove heavy metals and priority pollutants. Specialty pretreatment renders the most difficult to handle wastes non-toxic.

PRIMARY TREATMENT

Acid lime neutralization, chemical oxidation and granular activated carbon comprise ENVIROSURE'S primary treatment systems. Toxic waste waters are acidified for conditioning and neutralized with hydrated lime to precipitate heavy metals. The resulting dewatered solids are manifested to EPA approved and permitted secure landfill facilities. The supernatant from the dewatering process is collected for further treatment of priority pollutants by granular activated carbon. Chemical oxidation is used as required. The effluent is monitored continuously to ensure discharge compliance with all Federal, State and local pollution control regulations.

SPECIALTY PRETREATMENT SYSTEMS

ENVIROSURE employs specialty pretreatment systems for detoxification of hazardous materials which cannot be treated by conventional means. These systems afford generators cost effective solutions for disposal of highly problematic wastes.

Cyanide destruction
Cyanides are converted to carbon dioxide and nitrogen through a 20,000 gallon per day alkaline chlorination process. Additionally, toxic sulfides are converted to sulfates by treatment with hypochlorite.

Chemical reduction/oxidation
Dissolved metals in the waste water are treated to facilitate their removal. Hexavalent chrome is reduced to the non-toxic trivalent state using bisulfate as a reducing agent.

Hydrolysis
Water reactive materials are hydrolyzed in a controlled reaction producing a less volatile waste water which can then be treated through primary treatment systems.

Steam stripping
Steam stripping is a method under development for separating organics from highly acidic or alkaline wastes. The end product is a concentrated organic waste, offering the possibility of both solvent recovery and acid regeneration.

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